

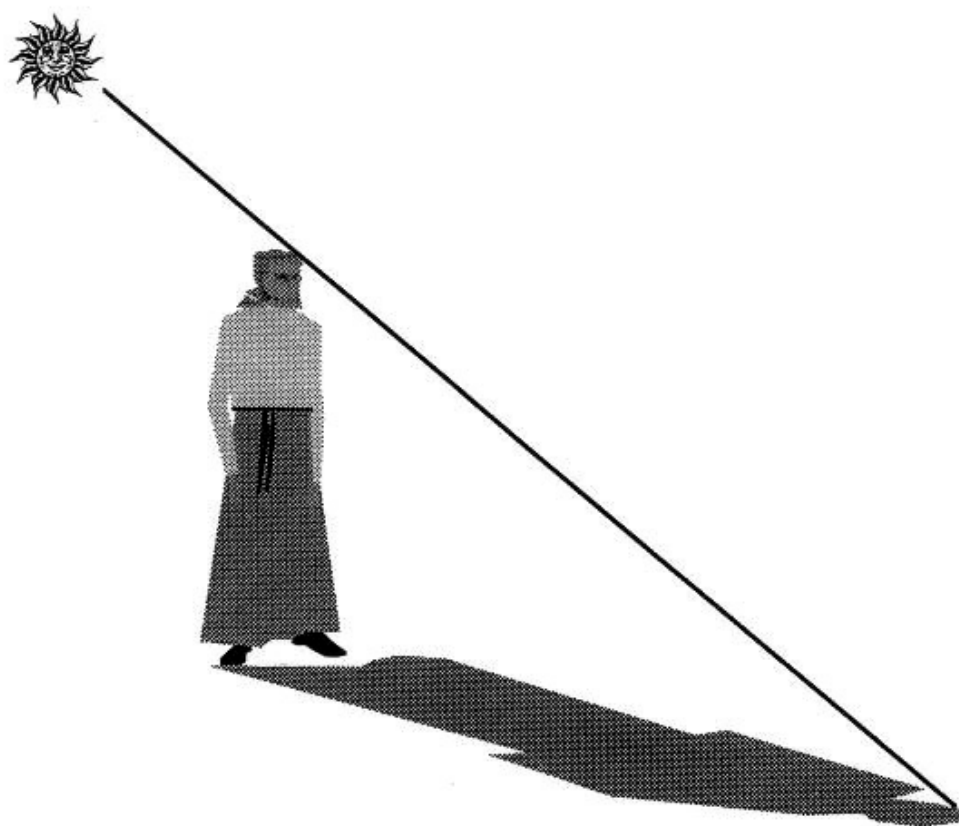
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# The Compendium\*

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\* *Compendium...* "giving the sense and substance of the topic within small compass." In dialing, a compendium is a single instrument incorporating a variety of dial types and ancillary tools.

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## The Portici Ham

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The illustration of a portable sundial in the form of a ham (Figure 1) is often found in gnomonic books. Most dialists are aware of it, but few know the true history behind it. The first reliable account of this type of sundial was contained in the third book in the series *The Illustrated Antiquities of Herculaneum*, published in Naples in 1762..

The authors of the book stated that they treated the sundial as previously unknown because no one before had seen a true sketch of the sundial, nor an exact description. The Neapolitan authors' description was intended to correct the erroneous account published in the famous *Encyclopédie ou Dictionnaire Raisonné des Sciences, des Arts, et des Metiers...* by Diderot and d'Alembert, which is full of errors and approximations.

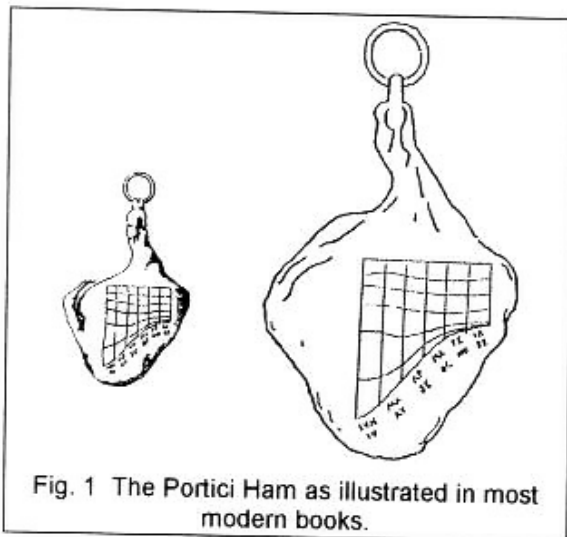


Fig. 1 The Portici Ham as illustrated in most modern books.

The author of the article "Gnomonique" in the VIIth volume of the *Encyclopédie* attempted to give some idea of the sundial in the form of a ham and wrote:

*A portable sundial has been found in the ruins of Herculaneum. This dial is round and in the form of a sleeve, above which is a ring, which serves, without doubt, to suspend the sundial as desired. All the instrument is of metal, and a little convex on its two surfaces. On one side is a toothed stylet, which is about the fourth part of the diameter of the instrument. One of these two*

*surfaces, which one can regard as the superior surface, is totally covered in silver, and divided by twelve parallel lines which also form small slightly hollow squares. The six last squares, which are terminated by the lower part of the circumference of a circle, are disposed as one can see, and contain the following characters, which are the first letters of the names of each month:*

IUN.MA.AP.MA.FE.IA  
IU.AV.SE.OC.NO.DE

*The way in which these months are arranged is remarkable in that it is a boustrophedon [alternate lines written right to left and left to right, as though ploughing with oxen].*

This is a brief extract of the text in the *Encyclopédie*. The Neapolitan authors of the book *Illustrated Antiquities of Herculaneum* vigorously disagreed with this text, thus giving us all the appearance of a real gnomonic dispute.

I cannot attempt to translate literally the contents of this centuries-old work, but I will comment upon some of its principal points.

The author of the article in the *Encyclopédie* has extracted his information from faulty sources which lead him to a number of inaccuracies. The two surfaces of the sundial are not convex or concave, but like those of a ham. The style or gnomon is not a piece of the broken tail of the ham, and it does not have teeth. Not only the superior surface is of silver, but the sundial is entirely of silver. It is also untrue that this superior surface is divided by twelve parallel lines that form small squares. In fact there are fourteen lines, of which 7 are straight and parallel. The other seven lines are neither straight nor parallel, and are composed of curves which are variably inclined. The months of the year are not disposed by a whim of the designer in the boustrophedon form. In fact, this being a sundial making use of the altitude of the sun, it is inscribed for half the shadows whose lengths, when the Sun is in the beginning of the zodiac, have been represented according to gnomonic rules from seven vertical and parallel lines. As the author had introduced the tail of

the ham as the gnomon on the left hand side, he necessarily had to place on the right the shorter shadow of the solstice of Capricorn, *i.e.* the first of the ascending signs; and on the left at the beginning, the solstice of the Crab, *i.e.* the first of the descending signs. He tells of having made the sketch of this sundial in the year 1754, when it was not discovered until 11 June 1755 in the excavations of Herculaneum and not at Portici. According to this the sundial should be called the "Ham of Ercolano"! [Ham of Herculaneum].

It appears as if the same article was published in a book *Monumenta Peloponnesia*, complete with all the aforementioned errors, probably being a collation derived from the *Encyclopédie*.

After having outlined all the assertions of the French author and declared most of them to be false, the Neapolitan authors illustrated the sundial with all its peculiarities from an examination of the actual sundial. Also they pointed out that the use of this sundial is identical to that of an altitude sundial, and it is suspended vertically with the acting part of the gnomon in line with the sun, as with a Shepherd's sundial.

The sundial was made by a Roman artist for use at a latitude of  $41^{\circ} 39' 45''$ . From this the authors tried to obtain the year of construction, calculating the obliquity of the ecliptic, from which they concluded that the sundial had been made about 28 AD. The authors hypothesized that the form of the sundial resulted from the maker's wish to commemorate the family name of the person that commissioned it. I wish to draw attention, finally to the superficiality and approximations of the illustrations given in modern books in comparison with that (Figure 3) provided by the authors of *Illustrated Antiquities of Herculaneum*, whose accurate illustration is apparently unknown to the majority of dialists.

#### Bibliographical References:

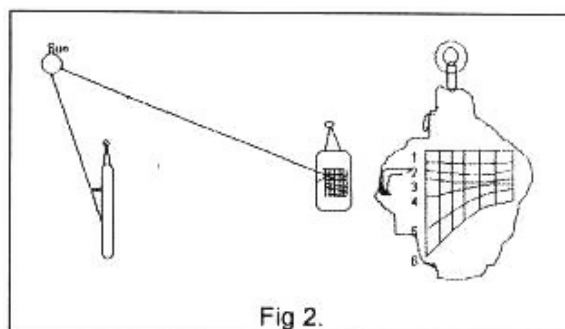
*Storia della Gnomonica*. Nicola Severino, Roccasecca, Italy, 1994. [History of Gnomonics]. Italian text.

*Encyclopédie ou Dictionnaire Raisonné des Sciences, des Arts, et des Métiers ....* Diderot et D'Alembert. Published 1751-1772 in 17 volumes and 11 volumes of plates in Neuchatel and

Paris. [Encyclopedia or Descriptive Dictionary of the Sciences, Arts and Trades...] French text. *Pittura Antiche d'Erculano*. Naples, 1762, Book III. [Illustrated Antiquities of Herculaneum].

#### THE USE OF THE PORTICI HAM

The Portici Ham is an altitude dial. Its gnomon is the tail of the ham on one side because the dial in use does not face the sun; it is oriented so the side faces the sun as shown in Figure 2.



The vertical lines correspond to lines of declination of the Sun at the beginning of the zodiacal sign. The diagonal lines are those of the twelve temporary hours. At the start from the highest to the lowest part, the second line coincides to the Hora Prima (1), from sunrise, the third line corresponds to the end of the Hora Secunda (2), the fourth line to the Hora Tertia (3), the fifth to the Hora Quarta (4), the sixth to the Hora Quinta (5), the seventh to the Hora Sexta (6).

The hour is read as with a normal altitude sundial, when the tip of the shadow of the gnomon touches the line, or the next point of the day on which the observation is made.

During the sun's daily journey, the shadow of the gnomon (the tail) descends from the Hora Prima line to the Hora Sexta, and in the afternoon it rises, passing the hour lines Hora Settima (7), Octava (8), Nona (9), Decima (10), Undecima (11) and Duodecima (12). The gnomon is adjustable and is placed where the point of the shadow touches the line of declination of the Sun corresponding to the day of the observations. This allows the immediate reading of the hours. As already mentioned, the sundial must be oriented so that the side of the dial faces the sun (not the face).

Part of the gnomon was missing in the original sundial. The authors of *Pittura Antiche d'Ercolano* reconstructed the missing piece which is shown in Figure 3. Their tests showed that the readings of the sundial were precise, except that on Seconda and Tertia hour lines

there was an equal degree of imprecision approximating to about 3 minutes.

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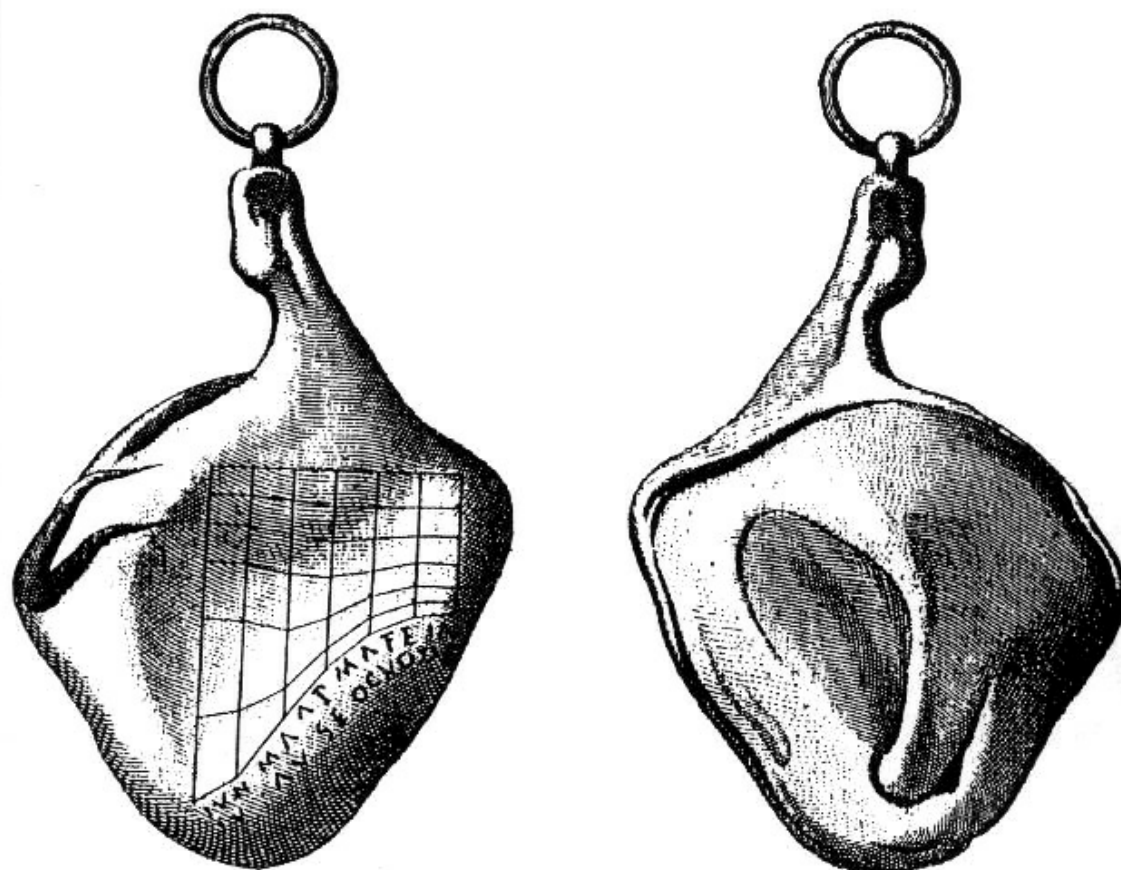


Fig. 3 From the engraved copper plate illustration given by the Neapolitan authors in the third book of *Illustrated Antiquities of Herculaneum*, 1762.



#### A Tove Quiz From Jeff Miller

From Humpty Dumpty's translation of Jabberwocky we learn of the propensity of toves to build their nests under sundials. (Compendium 1:3, Aug. 1994). But who first translated the passage? And who lived beneath the sundials before the toves?

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